

**REMARKS**

A petition for extension of time is filed concurrently herewith.

Claims 1-15 and 29-35 are hereby withdrawn. Claims 24 and 36-39 are cancelled. Claim 28 is original. Claims 16-23 and 25-27 are currently amended.

**Election of species.**

The Applicant hereby confirms the election of species II directed to claims 16-28 and 36-39 for prosecuting on merit.

**Claim rejection under 35 USC 112.**

The Examiner has rejected claims 16-28 and 36-39 for the use of the word "ECG" in these claims. Amended claims 16-23 and 25-28 do not include this terminology. In addition, claims 24 and 36-39 have been cancelled. Therefore, the Applicant respectfully requests that this rejection of claims 16-23 and 25-28 be withdrawn.

In addition, the Applicant respectfully submits that the terminology ECG is often used in the art to denote the electrical activity measured inside the art. However,

to add clarity to the application, paragraph 0004 has been amended to introduce the alternative terminology "electrogram" that is also often used in the art.

#### **Claim rejection under 35 USC 102**

The Examiner has rejected claims 16-28 and 36-39 as being anticipated by US Patent Application 2004/0133113, hereinafter Krishnan.

Amended claim 16 includes the following limitation:

- creating said channel through said cardiac septal material by delivering said radio-frequency electrical current from said active electrode to said grounding pad, said radio-frequency electrical current being delivered through said cardiac septal material.

To the contrary, Krishnan discloses using a needle to pierce a hole through a septum (for example, and non-limitingly, at paragraph 0082). There is no mention nor any suggestion in Krishnan that a channel can be created through cardiac septal material by delivering radio-frequency electrical current through the cardiac septal material.

Using radio-frequency electrical current to create a channel in cardiac septal material has many advantages as opposed to the use of needles. Indeed, the claimed method is performed using a device inserted into the heart of the patient.

The person performing the method does not have direct contact with the distal region of the device. When needles are used, there is always a risk that a pressure exerted onto the needle be too large and that the needle moves too far and injures the myocardium located on the other side of the septum once the septum has been perforated. It is critical that injuries to the internal surface of the heart be minimized as such injuries may lead to infections, other complications and eventually death of the patient.

The Applicant has discovered the surprising result that using an electrode to deliver an electrical current to create a channel in a cardiac septal material reduces the risks of such injuries. Among other reasons, the use of the electrical current to create the channel allows to exert a much smaller force onto the surgical device while creating the channel, which in turn allows to more easily control the movement of the surgical device before, during and after the creation of the channel.

The Applicant would like to bring to the attention of the Examiner US Patent 6,032,674 issued March 7, 2000 to Eggers et al.(hereinafter Eggers), which will be disclosed in an IDS to be filed shortly after the present response has been filed. This document discloses a device and a method for creating channels through the myocardium (the muscular layer located at the periphery of the heart) using radio-frequency electrical current. However, Eggers nowhere mentions that the device could be used to create a channel through cardiac septal material. In

addition, Eggers only describes embodiments of the invention wherein the electrical current is circulated between electrodes located in proximity to the material through which the channel is created (see Figures). Eggers never mentions that the electrical current may be delivered from an active electrode to a grounding pad while passing through cardiac septal material. To the contrary, Eggers emphasizes throughout the text the criticality of limiting the propagation of the current in surrounding tissue, for example by providing means for limiting the current provided by the electrode (for example Col. 10, lines 37-51, Col 11, lines 11-31, among others). Limiting the propagation of current in creating channels in the myocardium, as performed in Eggers, is required to limit the extent of unwanted tissue damage.

However, this is in complete opposition with the claimed invention as the use of a grounding pad necessarily requires that the electrical current propagates away from the active electrode and into the body. The Applicant has found the surprising result that delivering radio-frequency electrical current into cardiac septal material from an active electrode to a grounding pad does not cause major unwanted side effects. It is believed that this is caused mainly by the specific anatomy of the septum.

Indeed, the septum of the heart is typically thinner than the myocardium. Also, blood, which typically has a lower impedance than tissue, is present on both sides of the septum. Therefore, when the electrical current is injected into the

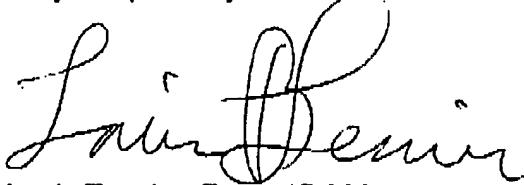
septum, it does not spread over a large distance before coming into a contact with blood. Because of its low impedance, blood creates a preferential conduction path at the surface of the septum and most of the current at the surface is therefore conducted away from the septum and into the blood. When entering the blood, the electrical current is spread over a relatively large volume before coming into contact with other tissue. When the current contacts other tissue, such as for example the myocardium, its density has been reduced so as to present only minimal risks of unwanted side effects. The blood itself would require a very large current intensity to be heated at a damaging temperature because of its low impedance as ohmic power delivery increases with impedance at fixed current. Such current intensities are relatively easy to avoid by controlling the intensity of the current delivered by the active electrode so that the blood does not coagulate away from the septum.

Claims 17-23 and 25-28 all depend directly or indirectly from claim 16 and as such include all the limitations of this base claim. Accordingly, the Applicant respectfully submits that claims distinguish over the art cited by the Examiner and from Eggers for the same reasons as those expressed hereinabove with respect to claim 16.

It is respectfully submitted that when the rejection of the claims is reviewed in light of Applicant's arguments, the invention without a doubt should be considered patentably distinguished over the currently applied references. It is now

believed the above application is in order for Allowance and such action would be appreciated.

Very Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Louis Tessier".

Louis Tessier; Reg : 45,289

Agent for the Applicant